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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,209	10/31/2003	Richard G. Egan	8581/GDM	9981
20349	7590	07/26/2005		
			EXAMINER	
			FEGGINS, KRISTAL J	
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/698,209	EGAN, RICHARD G.	
	Examiner	Art Unit	
	K. Feggins	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on ____.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-32 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-27 is/are rejected.

7) Claim(s) 28-32 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/10/04 & 1/21/05.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
5) Notice of Informal Patent Application (PTO-152)
6) Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 9-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Kajiwara et al. (US 2002/0043164 A1).

Kajiwara et al. discloses the following claimed limitations:

- * regarding claim 1, a computer-implemented method for use in a printer (Abstract, para 0116-0125, figs 11-14).
 - * (A) receiving a representation of a subset of an image printed by the printer (para 0116-0125, figs 11-14);
 - * (B) identifying a first pattern in the subset of the image, the first pattern encoding a position of the subset along an axis of the image (para 0116-0125, figs 11-14);
 - * (C) identifying the position of the subset along the axis of the image based on the first pattern (para 0116-0125, figs 11-14);
 - * (D) estimating a color misregistration along the axis of the image based on the position of the subset along the axis of the image (para 0116-0125, figs 11-14).

* regarding claim 2, wherein the step (D) comprises steps of: (D) (1) identifying an expected distance between a first shape having a first color and a second shape having a second color in the subset of the image based on the position of the subset along the axis of the image (para 0116-0125, figs 11-14);

* (D) (2) estimating an actual distance between the first and second shapes based on the representation of the subset of the image (para 0116-0125, figs 11-14);

* (D) (3) estimating the color misregistration along the axis of the image as the difference between the expected distance and the estimate of the actual distance between the first and second shapes (para 0116-0125, figs 11-14).

* regarding claim 3, wherein the printer is a tandem printer/color image forming apparatus/ and wherein the axis of the image runs in a cross-web direction of the image (para 0116-0125, figs 11-14).

* regarding claim 4, wherein the first pattern comprises a subset of a second pattern having a plurality of zones containing a plurality of unique sub-patterns, (para 0116-0125, figs 11-14);

* (C)(1) identifying one of the plurality of unique sub-patterns in the first pattern(para 0116-0125, figs 11-14);

* (C)(2) identifying the position of the subset along the axis of the image based on the sub-pattern identified in step (C)(1) (para 0116-0125, figs 11-14).

* regarding claim 5, wherein the second pattern comprises a plurality of lines running parallel to a second axis of the image and a plurality of shapes abutting the plurality of lines, and wherein the step (C)(1) comprises a step of identifying one of the plurality of unique sub-patterns in the first pattern by matching a pattern of abutting shapes in the subset of the image to a pattern of abutting shapes in the first pattern (para 0116-0125, figs 11-14).

* regarding claim 6, wherein the printer comprises a first print head for printing at a first resolution and a second print head for printing at a second resolution that differs from the first resolution, wherein the second pattern comprises a plurality of shapes printed by the first and second print heads, and wherein each of the plurality of shapes is printed solely by a single one of the first and second print heads (para 0116-0125, figs 11-14).

* regarding claim 7, a computer-implemented method for use in a tandem printer comprising a first print head for printing at a first resolution and a second print head for printing at a second resolution that differs from the first resolution (Abstract, para 0116-0125, figs 11-14);

* (A) receiving a representation of a subset of an image printed by the printer (para 0116-0125, figs 11-14);

* (B) identifying a first pattern in the subset of the image, the first pattern encoding a position of the subset along an axis of the image, the axis running in a

cross-web direction of the image, the first pattern comprising a subset of a second pattern having a plurality of zones containing a plurality of unique sub-patterns (para 0116-0125, figs 11-14);

* (C) identifying the position of the subset along the axis of the image based on the first pattern by performing steps of: (1) identifying one of the plurality of unique sub-patterns in the first pattern (para 0116-0125, figs 11-14);

* (2) identifying the position of the subset along the axis of the image based on the identified sub-pattern (para 0116-0125, figs 11-14);

* (D) estimating a color misregistration along the axis of the image based on the position of the subset along the axis of the image by performing steps of: (1) identifying an expected distance between a first shape having a first color and a second shape having a second color in the subset of the image based on the position of the subset along the axis of the image (para 0116-0125, figs 11-14);

* (2) estimating an actual distance between the first and second shapes based on the representation of the subset of the image (para 0116-0125, figs 11-14);

* (3) estimating the color misregistration along the axis of the image as the difference between the expected distance and the estimate of the actual distance between the first and second shapes (para 0116-0125, figs 11-14).

* regarding claim 8, wherein the second pattern comprises a plurality of lines running parallel to a second axis of the image and a plurality of shapes abutting the plurality of lines, and wherein the step (C)(1) comprises a step of identifying one of the

plurality of unique sub-patterns in the first pattern by matching a pattern of abutting shapes in the subset of the image to a pattern of abutting shapes in the first pattern (para 0116-0125, figs 11-14).

* regarding claim 9, a printer/color image forming apparatus/ (Abstract);

* means for receiving a representation of a subset of an image printed by the printer (para 0116-0125, figs 11-14);

* first identification-means for identifying a first pattern in the subset of the image, the first pattern encoding a position of the subset along an axis of the image; second identification means for identifying the position of the subset along the axis of the image based on the first pattern (para 0116-0125, figs 11-14);

* means for estimating a color misregistration along the axis of the image based on the position of the subset along the axis of the image (para 0116-0125, figs 11-14).

* regarding claim 10, wherein the means for estimating and means for identifying an expected distance between a first shape having a first color and a second shape having a second color in the subset of the image based on the position of the subset along the axis of the image (para 0116-0125, figs 11-14);

* means for estimating an actual distance between the first and second shapes based on the representation of the subset of the image (para 0116-0125, figs 11-14);

* means for estimating the color misregistration along the axis of the image as the difference between the expected distance and the estimate of the actual distance between the first and second shapes (para 0116-0125, figs 11-14).

* regarding claim 11, wherein the first pattern comprises a subset of a second pattern having a plurality of zones containing a plurality of unique sub-patterns, and wherein the second identification means comprises: means for identifying one of the plurality of unique sub-patterns in the first pattern; and means for identifying the position of the subset along the axis of the image based on the sub-pattern identified in step (C)(1) (para 0116-0125, figs 11-14).

* regarding claim 12, wherein the second pattern comprises a plurality of lines running parallel to a second axis of the image and a plurality of shapes abutting the plurality of lines, and wherein the second identification means further comprises means for identifying one of the plurality of unique sub-patterns in the first pattern by matching a pattern of abutting shapes in the subset of the image to a pattern of abutting shapes in the first pattern (para 0116-0125, figs 11-14).

* regarding claim 13, wherein the printer comprises a first print head for printing at a first resolution and a second print head for printing at a second resolution that differs from the first resolution, wherein the second pattern comprises a plurality of shapes printed by the first and second print heads, and wherein each of the plurality of

shapes is printed solely by a single one of the first and second print heads (para 0116-0125, figs 11-14).

* regarding claim 14, . A data structure tangibly embodied in a computer readable-medium and suitable for printing as a calibration image for use in performing color registration correction in a multi-color printer, the data structure representing an image having a first axis, the image comprising a plurality of regions positioned along the first axis, the plurality of regions comprising a plurality of patterns, each pattern P in the plurality of patterns encoding the position of pattern P along the first axis (para 0116-0125, figs 11-14).

* regarding claim 15, wherein the plurality of patterns comprises: a plurality of lines positioned along the first axis and running parallel to a second axis of the image; and a plurality of shapes abutting the plurality of lines (para 0116-0125, figs 11-14).

* regarding claim 16, wherein the printer comprises a plurality of print heads, wherein the plurality of lines have a plurality of colors, and wherein each of the plurality of lines has a single color suitable for printing by a single print head in the printer (para 0116-0125, figs 11-14).

* regarding claim 17, wherein the plurality of lines includes at least one line of each of the colors printable by a single one of the plurality of print heads (para 0116-0125, figs 11-14).

* regarding claim 18, wherein each of the plurality of lines is exactly one pixel wide, and wherein each of the plurality of abutting shapes is exactly one pixel wide (para 0116-0125, figs 11-14).

* regarding claim 19, a data structure tangibly embodied in a computer readable-medium and suitable for printing as a calibration image for use in performing color registration correction in a multi-color printer comprising a plurality of print heads, the data structure representing an image having a first axis, the image comprising a plurality of regions positioned along the first axis, the plurality of regions comprising a plurality of patterns, each pattern P in the plurality of patterns encoding the position of pattern P along the first axis, (para 0116-0125, figs 11-14);

* the plurality of patterns comprising: (1) a plurality of lines positioned along the first axis and running parallel to a second axis of the image (para 0116-0125, figs 11-14);

* (2) a plurality of shapes abutting the plurality of lines, wherein the plurality of lines have a plurality of colors, and wherein each of the plurality of lines has a single color suitable for printing by a single print head in the printer (para 0116-0125, figs 11-14).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4, Claims 20-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kajiwara et al. (US 2002/0043164 A1) in view of Mitsuru Sawano (EP 0 720 350 A2).

Kajiwara et al. disclose the following claimed limitations:

- * regarding claim 20, a first shape printed by the first print head of color yellow;
- * a second shape printed by the second print head of color magenta.
- * regarding claim 25, a printer (para 0116-0125, figs 11-14);
- * a first print head for printing at a first resolution (para 0116-0125, figs 11-14);
- * a second print head for printing at a second resolution that differs from the first resolution (para 0116-0125, figs 11-14).

Kajiwara et al. disclose all of the claimed limitations except for the following:

- * regarding claim 20, (B) identifying, in the subset of the image, a first shape printed by the first print head;
- * identifying, in the subset of the image, a second shape printed by the second print head;

* regarding claims 22 & 24, wherein the step (D) comprises steps of: (D)(1) identifying a center of the first shape along the first axis;

- * identifying a center of the second shape along the first axis;
- * estimating the location of the first shape as the identified center of the first

shape;

* estimating the location of the second shape as the identified center of the second shape.

* regarding claim 23, wherein the first shape consists of a first pixel printed by the first print head and wherein the second shape consists of a second pixel printed by the second print head.

* further regarding claim 25, first identification means for identifying, in the subset of the image, a first shape printed by the first print head;

* second identification means for identifying, in the subset of the image, a second shape printed by the second print head;

* regarding claims 21 & 26, a tandem printer and wherein the first axis runs in a down-web direction of the image.

* regarding claim 27, means for identifying a center of the first shape along the first axis; means for identifying a center of the second shape along the first axis; means for estimating the location of the first shape as the identified center of the first shape;

* means for estimating the location of the second shape as the identified center of the second shape.

Sawano discloses the following claimed limitations:

* regarding claim 20, (B) identifying, in the subset of the image, a first shape printed by a first color (page 12, figs 1-11) for the purpose of recording an image making a variable density;

* identifying, in the subset of the image, a second shape printed by the second color; (page 12, figs 1-11) for the purpose of making a variable density;

* identifying, in the subset of the image (pgs 8, 12 & 13, figs 1-11) for the purpose of preventing tone color from changing.

* regarding claims 22 & 24, wherein the step (D) comprises steps of: (D)(1) identifying a center of the first shape along the first axis (pgs 8, 12 & 13, figs 1-11) for the purpose of maintaining color patterns in a relationship of complementary color.

* identifying a center of the second shape along the first axis (pgs 8, 12 & 13, figs 1-11) for the purpose of maintaining color patterns in a relationship of complementary color;

* estimating the location of the first shape as the identified center of the first shape; (pgs 8, 12 & 13, figs 1-11) for the purpose of arranging at random dots of predetermined size in accordance with a gradation.

* estimating the location of the second shape as the identified center of the second shape (pgs 8, 12 & 13, figs 1-11) for the purpose of arranging at random dots of predetermined size in accordance with a gradation.

* regarding claim 23, wherein the first shape consists of a first pixel printed by the first color and wherein the second shape consists of a second pixel printed by the second color (pgs 8, 12 & 13, figs 1-11) for the purpose of maintaining color patterns in a relationship of complementary color.

* further regarding claim 25, first identification means for identifying, in the subset of the image, a first shape printed by the first color and a second identification means for identifying, in the subset of the image, a second shape printed by the second color (pgs 8, 12 & 13, figs 1-11) for the purpose of arranging at random dots of predetermined size in accordance with a gradation;

* regarding claims 21 & 26, a tandem printer and wherein the first axis runs in a down-web direction of the image (pgs 8, 12 & 13, figs 1-11) for the purpose of maintaining color patterns in a relationship of complementary color.

* regarding claim 27, means for identifying a center of the first shape along the first axis; means for identifying a center of the second shape along the first axis; means for estimating the location of the first shape as the identified center of the first shape

(pgs 8, 12 & 13, figs 1-9); and means for estimating the location of the second shape as the identified center of the second shape (pgs 8, 12 & 13, figs 1-9) for the purpose of arranging at random dots of predetermined size in accordance with a gradation.

It would have been obvious at the time of the invention was made to a person having ordinary skill in the art to utilize identifying, in the subset of the image, a first shape printed by a first color and a second shape printed by the second color; identifying, in the subset of the image; identifying a center of the first and second shape along the first axis; estimating the location of the first and second shape as the identified center of the first and second shape; wherein the first shape consists of a first pixel printed by the first color and wherein the second shape consists of a second pixel printed by the second color; first and second identification means for identifying, in the subset of the image, a first and second shape printed by the first and second color; a tandem printer and wherein the first axis runs in a down-web direction of the image; means for identifying a center of the first and second shape along the first axis; means for estimating the location of the first and second shape as the identified center of the first shape as taught by Sawano into Kajiwara et al. for the purposes of recording an image making a variable density, preventing tone color from changing, maintaining color patterns in a relationship of complementary color and arranging at random dots of predetermined size in accordance with a gradation.

Allowable Subject Matter

5. Claims 28-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Communication With The USPTO

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Feggins whose telephone number is 571-272-2254. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talbott Dave can be reached on 571-272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K. Feggins 7/05
K. FEGGINS
PRIMARY EXAMINER